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SYPHILIS OF THE LIVER, IMITATING CIRRHOSIS.¹

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THAT syphilis frequently affects the liver has been known for several centuries, but no one realized how frequently until quite recent times. The Wassermann reaction in the blood has taught us the meaning of many visceral lesions whose causation was formerly obscure: some of those in heart and aorta, for example, as well as in lungs, kidneys, and brain. So with the liver, manifestations of many different types of disease are now recognized to be due to syphilitic infection, and conditions formerly considered hopeless, because there was no way known to overcome them, are now occasionally combated successfully by attacking the disease that underlies them. Rolleston in his text-book on *Diseases of the Liver* describes seven different groups of cases which syphilis of the liver may simulate: (1) portal cirrhosis; (2) lardaceous disease; (3) tumor of the liver; (4) hepatic suppuration; (5) cholelithiasis; (6) splenic anemia; (7) hypertrophic biliary cirrhosis. Among these the largest group is that imitating cirrhosis, and it is surprising how often in a case corresponding in every clinical detail to portal cirrhosis, either hypertrophic or atrophic, a positive Wassermann reaction is found and improvement and even cure follow specific treatment. A group of such remarkable instances has come under the writer's observation during the past year, partly in the medical wards of the Stanford University Medical Department and partly

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in private work and these have prompted the decision to call attention to this subject.

CASE I.—A woman, aged forty-five years, entered the gynecological service in Lane Hospital, October 19, 1912, complaining that she had a tumor in the abdomen, which she had discovered only three weeks before. She had always previously been well, and now had no pain or discomfort except that in the abdomen. Examination showed a moderate amount of free fluid present in the peritoneal cavity, and a hard tumor in the lower abdomen, reaching as high as the navel. At operation about a gallon of clear fluid was evacuated, and the tumor, which proved to be a uterine fibroid, was removed. But it was also discovered that the gall-bladder contained gall-stones, the liver was hard and nodular, and there were numerous indurated glands in the retroperitoneal space. A piece of the nodular liver was removed for microscopic examination, and the pathologist's report on the sections read "syphilitic cirrhosis of the liver." The case was then transferred to the medical service.

The clinical feature of importance in this case was recurring ascites. Subsequent to the original removal of fluid by laparotomy, the abdomen refilled rapidly, so that three weeks later it had to be tapped and 3150 c.c. were removed. Ten days later 5400 c.c. more were withdrawn; after that the ascites never again became so excessive as to demand paracentesis. The right pleura, however, likewise gradually became filled with fluid, so that one month after the laparotomy this side of the chest had to be tapped, when 1500 c.c. were removed. One week later 1000 c.c. more were withdrawn, and only four days after that 1500 c.c. again; in each instance the aspiration of the chest was urgently required to relieve dyspnea. Always after the abdominal tapping a hard, irregular, tender mass could be felt in the right side of the abdomen, below the costal margin.

Besides the original report of the pathologist on the piece of liver tissue removed, not only the blood showed a triple X Wassermann reaction, but also the ascitic fluid and the pleural fluid when these were obtained. The combination of enlarged, nodular liver, with ascites, secondary involvement of the right pleural cavity, and such positive reactions in blood and peritoneal and pleuritic contents would have made the diagnosis sufficiently clear even without the pathologist's report.

This patient was given vigorous specific treatment. She received salvarsan intravenously in full dosage (0.6 gram) on October 27, and December 15; mercurial inunctions, 1 dram each day for thirty days, and potassium iodide in doses gradually increased from 10 grains up to 1 dram three times a day throughout her illness. But in spite of this she steadily grew weaker and thinner, and died on December 26. The autopsy showed syphilitic cirrhosis

of the liver, syphiloma at the base of the liver, and syphilitic atheroma of the aorta.

The points of special interest in this case were (1) the insidiousness of onset. The patient must have had extensive changes in her liver long before she came for advice, but never realized that she needed treatment until warned by the discovery of a tumor in her abdomen, which after all was not the real disease. (2) The finding of a hard pelvic tumor associated with ascites naturally made the surgeon think first of cancer, and when the liver was found at operation to be likewise hardened and irregular, it was supposed to be involved by metastatic growth. This possibility of malignant disease can never be overlooked when a nodular liver and ascites are combined. (3) The occurrence of right-sided hydrothorax with ascites was formerly considered almost diagnostic of tuberculosis of peritoneum and pleura, but, as Cabot has shown, this pleuritic involvement may occur secondary to ascites from any cause, even from ordinary portal cirrhosis. (4) The failure of all treatment to save this patient's life was easily understood at autopsy, when the marked changes in liver structure lay revealed, for the killing of spirochetes and checking of further ravages could not avail to restore to usefulness a vital organ already so far destroyed. But all cases have not gone so far when first discovered, and for such there still is hope, as the following will show:

CASE II.—A woman, aged forty-five years, entered the medical ward in Lane Hospital, February 13, 1913, complaining of "stomach troubles." Her general health had always been good, and she never had had any previous disease of any kind. She had been pregnant four times during her married life, but the first three had each time miscarried at seven months; the fourth pregnancy she had carried through successfully to full term, and the child was living and well. She began to ail just before Thanksgiving, 1912, with a great craving for food and water. Then she noted the following succession of symptoms: (1) Pain in the region of the navel and general abdominal distress after eating; this pain was slight and did not radiate; there was a sensation of a lump present about the navel, but she could discover none; the bowels became constipated. (2) A week or ten days after onset of these symptoms the skin became yellow, the urine dark, and the feces light colored; this jaundice persisted about a week, disappearing gradually just before Christmas. (3) She noticed about Christmas that she was losing weight rapidly, though her appetite remained good, and this combination of persistent loss of weight with good appetite had continued. (4) About January 1 she had an attack of vomiting, and noticed a small amount of blood in the vomitus; again during the night of January 30 she vomited about a pint of bright red fluid resembling blood, and the next day her stools contained dark red blood, and after that persistently resembled

tar in color and consistence. (5) Craving for food and persistent thirst had been present from the onset, so that she ate and drank large quantities, but nevertheless steadily lost in weight. The cardinal symptoms of her complaint were thus an attack of acute indigestion at the beginning, jaundice, loss of weight, hematemesis and melena, polyphagia, and polydipsia.

The woman was pale and poorly nourished. Neither the lungs, heart, nor arteries showed disease. The liver area was decreased to 8 cm.; the spleen increased to 12 cm., and the lower edge was palpable. While under observation in the ward she gradually developed marked ascites, though never excessive enough to demand tapping. The blood showed a decided secondary anemia. The urine showed a high specific gravity, and the constant presence of sugar, amounting to from 5 to 8 per cent. Finally, there was a positive triple X Wassermann reaction in the blood. The atrophic liver, enlarged spleen, ascites, with a previous history of indigestion and hematemesis, spoke clearly for hepatic cirrhosis, while the glycosuria, with polyphagia, polydipsia, and loss of weight might be explained by coincident disease of the pancreas, but both probably were luetic in origin. On treatment by salvarsan intravenously, mercury by inunction, and iodide of potassium internally in large doses she gradually improved greatly, the ascites almost entirely disappeared, and when last seen in May, 1913, though still far from well, she was able to get about all the time and to attend to her household duties.

While the foregoing cases were undoubtedly cirrhosis of the liver, but a special form of cirrhosis due to syphilis, it must be remembered that not all conditions resembling by clinical and by laboratory tests those described are necessarily cirrhosis or due to lues. The old observation that in clinical medicine two and two do not always make four is demonstrated by the following history:

CASE III.—A man, aged fifty-five years, entered the medical ward on March 18, 1912, complaining of jaundice that had existed since the previous January. He had never been ill before. The present trouble began with severe diarrhea, persisting for a week, followed by slight jaundice, which rapidly deepened. He had since been given a limited diet, and to this attributed the fact that he had lost twenty pounds in weight. He had no subjective symptoms whatever. His appetite was good; digestion undisturbed; there was no pain in the abdomen or elsewhere, and no marked loss of strength. Examination showed extreme jaundice; a large, hard, smooth liver, measuring 13 cm. in area in the nipple line, and palpable for 8 cm. below the costal margin, with the lower border sharply defined; and an enlarged spleen with lower border palpable below the left costal margin. The liver was not particularly tender and not nodular. No other physical abnormalities were found, in the remainder of the abdomen or the rectum, to account for the jaundice.

The blood showed a triple X Wassermann reaction and combining this with the clinical history and physical findings a diagnosis was reached of syphilis of the liver. He was therefore given salvarsan intravenously on two different occasions, with an interval of two weeks between doses, followed by a course of mercurial inunction and by potassium iodide internally. But this treatment had no effect whatever upon his jaundice or upon the size of his liver or spleen. On the contrary, he steadily grew weaker, and ascites gradually developed. Therefore, on April 24 an exploratory laparotomy was done by Dr. Stillman, and this revealed at the upper border of the left lobe of the liver a hard, nodular mass as large as a man's fist. As this was considered inoperable, the abdomen was closed at once, but the patient died a few days later, on April 27. The autopsy disclosed a huge carcinoma of the liver, with central degeneration. No primary focus could be found elsewhere, after careful search, and the case was set down as one of primary hepatic carcinoma.

It seems probable that there was no relation whatever between this patient's real disease and his Wassermann reaction. The latter was undoubtedly evidence of syphilitic infection, but it did not give any reliable clue as to the nature of the pathological process in the liver; the two conditions were present simply by coincidence and not at all as cause and effect. It is possible, of course, that ordinary portal cirrhosis and a Wassermann reaction may in the same way coexist in a patient without meaning that the cirrhosis is luetic; but when a marked beneficial effect from therapy directed to syphilis is produced upon the symptoms and signs due to hepatic disease, the conclusion seems warranted that the coexistence of the two is more than a coincidence. Such was the conclusion in Case II, and such seemed clearly to be the case in the following instance.

CASE IV.—In June, 1913, a man, aged fifty-three years, sought advice for "stomach trouble." He had never had any previous illness of consequence, except he recalled a venereal sore when he was eighteen, which was treated briefly and "cured." Since then he had remained perfectly well until the present trouble began. He had been ailing about eighteen months, complaining at the outset for months of vertigo like seasickness, so that for days at a time he would have to remain in bed. Recently this symptom had been less troublesome; but he complained particularly now of soreness, and tenderness over the pit of the stomach; and if he lay on the left side, he felt so much pain he had to turn back to the right. Appetite was good; he felt hungry all the time; his food did not distress; there was no nausea nor vomiting. He had lost about thirty-five pounds in weight, and had grown very weak; also, he had noted that in the last few months he had grown pale, sallow, and icteric. This patient had a greatly enlarged liver, palpable

across the upper abdomen, with a total area on percussion of 16 cm.; the lower edge was hard but rounded, and the surface smooth and regular, but quite tender. There was no ascites, and no other organic abnormality was found. The blood showed a triple X Wassermann reaction. After treatment by mercurial inunctions and potassium iodide internally (the patient declined salvarsan), this patient in three months gained twenty-two pounds, his liver dulness receded until it measured but 10 cm., and his symptoms all disappeared.

Here was a case of undoubtedly hepatic syphilis, not yet having reached the stage of ascites, marvellously improved by specific therapy. Its recognition by means of the Wassermann reaction clearly indicated the plan of treatment, and the treatment proved by its efficacy that the hepatic cirrhosis and the luetic infection were sequence and not coincidence.

But the recognition of cirrhosis of the liver does not always lead to a test for syphilis as a possible cause, and so valuable time may be lost and a true understanding of the facts comes too late. The following case is one that might possibly have been saved had it been estimated earlier at its real value.

CASE V.—In August, 1913, a man, aged fifty-four years, was brought to Lane Hospital delirious and unconscious. Through his friends it was learned that he had always been well until a year before, when he vomited a quantity of blood; and since then he had gradually "run down," growing steadily thinner and weaker and less and less able to attend to his work. Two weeks before coming to the hospital he grew so weak he had to go to bed, became drowsy and delirious and remained so from that time on. On examination he was found to be greatly emaciated and slightly icteric; there was a moderate ascites, with atrophied liver and enlarged spleen; no signs of disease in the heart, but dulness and rales at each pulmonary base; the urine showed a heavy cloud of albumin, with many hyaline and granular casts. He was found to have a daily persistent rise of temperature, from 100° each morning to 103° each afternoon; his blood showed 21,600 leukocytes to the cm., with 88 per cent. polymorphonuclears. After coming to the hospital he lived but three days. The diagnosis made was cirrhosis of the liver, with ascites and with terminal toxemia. The report on the Wassermann reaction was not received prior to death. Autopsy revealed a liver shrunken to half its normal size, nodular and irregular, with many fibrous strands running through it, and a spleen about twice the normal size, studded with small abscesses, subsequently proved to be broken-down gummata. Both lungs showed a terminal pneumonia, which was the direct cause of death, and which accounted for the toxemia, the fever, and the leukocytosis.

If this man's condition had been recognized a year earlier, when he had his hematemesis, there would have been some prospect of

saving his life. Even then, however, the diagnosis would probably have been simply cirrhosis of the liver and the real etiology would have escaped notice, for there was nothing in the man's past history, his manner of life, or his previous ailments to cause any suspicion whatever of lues; if one depended only upon old routine methods of investigation, no other conclusion than cirrhosis could have been reached.

The final case observed illustrates how the error of overdiagnosis may be made and a conclusion reached that is even more serious than the facts warrant, rather than less so.

CASE VI.—A woman, aged forty-three years, was brought from the country in September, 1913, for examination, because her husband had been told she had cancer and her case was hopeless. She had been married for twenty-six years, but never had a pregnancy. Though always of small frame and low energy, she had never had any serious disease. For eight years she had had chronic "stomach trouble," her food souring soon after it was eaten, with occasional vomiting of material very irritating to the throat, and her sleep habitually disturbed by gas in the stomach and distress. She never had weighed over one hundred and twelve pounds, but there had been no recent loss of weight of any consequence. The patient was small, poorly nourished, pale, and sallow. No abnormality was found in any organ except in the abdomen; but there was found a marked bulging over the right lower thorax and upper abdomen; dulness on percussion from slightly below the nipple level to the level of the navel, 21 cm. in all; the lower border of this mass was palpable as a sharp, hard edge; the surface smooth but very tender. The spleen apparently was not enlarged. The abdomen showed a small amount of free fluid present. The stomach was displaced downward but not dilated, with no evidence of food retention, and a moderate subacidity; total acidity, 30 per cent.; free HCl, 12 per cent.; combined HCl, 10 per cent. The Wassermann reaction was a triple X positive one. On these findings it seemed reasonable to assume that her true condition was hepatic syphilis and not cancer. Too short a time has since elapsed to put the matter to the therapeutic test.

CONCLUSIONS.—The lessons to be learned from the foregoing histories are the following:

1. In any case that appears to be cirrhosis of the liver, judging from clinical history and physical signs, the blood should always be examined for syphilis. If the Wassermann reaction is positive, vigorous specific treatment will often produce marvelous improvement not to be expected in any other way; but even when the reaction is positive, the liver disease may not be luetic, and so specific therapy may prove of no avail; yet at the same time the therapeutic test will have given valuable information and have done no harm.

2. There is no certain way to tell which case of hepatic cirrhosis is luetic and which is not, except by the blood test, for previous history of infection, or of other earlier manifestations of syphilis, as well as stigmata produced elsewhere in the body by the disease, may all be lacking absolutely; while there may be nothing about the condition of the liver on physical examination or the symptoms it produces, to determine the etiology or to distinguish ordinary portal cirrhosis from luetic.

3. Syphilitic cirrhosis of the liver is a common form of hepatic disease, and must never be forgotten in the differential diagnosis of any case where symptoms and signs point to the liver as the organ involved.

SYPHILIS OF THE VERTEBRAL COLUMN: ITS SYMPTOMATOLOGY AND NEURAL COMPLICATIONS.¹

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INTRODUCTORY REMARKS. Syphilis is recognized as a fairly frequent occurrence in certain portions of the skeleton, more especially of the tibia, clavicle, and skull. All authorities agree that involvement of the spinal column is very rare, and some writers even regard its occurrence in the dorsal and lumbar regions as somewhat doubtful. This spirit of skepticism is probably due to the fact that many of the cases formerly recorded as syphilitic were really tubercular in nature, and many such errors of interpretation are to be found in the earlier literature. In the past few years, interest in this question has been revived, and the condition while unquestionably more frequent than is generally held, is nevertheless a comparatively rare affection.

At the present time, there are about one hundred well-authenticated cases recorded in literature, from which may be obtained a fair idea of its frequency, localization, and symptomatology.

The first statistics on this subject were published by Neumann in 1904, giving an analysis of 55 cases. The vertebral localization was as follows:

Cervical region	36 cases
Dorsal region	9 "
Lumbar region	8 "
Sacral region	2 "

¹ Presented at the meeting of the American Neurological Association, June, 1912.